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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,466	11/02/2001	Oskar Bschorr	085874-0353	4677

7590

10/06/2005

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EXAMINER

MICHALSKI, JUSTIN I

ART UNIT

PAPER NUMBER

2644

DATE MAILED: 10/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/890,466	Applicant(s) BSCHORR ET AL.	
	Examiner Justin Michalski	Art Unit 2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-15, 17-19, 23-46, 49, 52, 55-60 and 62-67 is/are rejected.
- 7) ☒ Claim(s) 16, 20, 21, 50-52 and 54 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: pressure sensor 58. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 61 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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The specification does not describe a watch, mobile telephone, remote control unit, pen, spectacles, jewelry, bank card, keyboard, screen, key ring, toy, household item, hearing aid, or other component incorporating a sound generator and whereby non-utilized or specially designed dead volumes are used as buffer volumes.

4. Claims 47 and 48 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not describe a pump with one supply direction, the fluid volume flow is guided by two valves in front of and behind the pump. The office notes that Fig. 8 discloses one valve in front and behind the pump.

5. Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not provide support for at said pump system produces volume displacement and/or pressure variations through a mechanism selected from the group consisting of... (emphasis added).

6. Claim 65 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had

possession of the claimed invention. The specification does not provide support for at least one sound outlet between said first and third and/or said second and third acoustically-separated volumes, respectively (emphasis added).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 10, 11-15, 18, 19, 23-31, 33-35, 37-39, 41, 43-46, 49, 52, 55, 58-60, 62-67 are rejected under 35 U.S.C. 102(b) as being anticipated by Doi et al. (Hereinafter "Doi") (US Patent 4,194,095).

Regarding Claim 10, Doi discloses a sound generator for anti-sound, signal, speech and music reproduction from the infrasound to the ultrasound range and in response to a required sound signal, the sound generator comprising: two acoustically-separated volumes (13 and 10); a sound outlet operatively coupled to at least one of said acoustically-separated volumes (output of speaker); a pump system (14), including at least one pump, adapted to convey a fluid volume flow between said acoustically-separated volumes and through said sound outlet, the direct flow component of the fluid volume flow being zero (Col. 3, lines 57-59) means for modulating said volume flow in response to said required sound signal.

Regarding Claim 65, Doi discloses a sound generator for anti-sound, signal, speech and music reproduction from the infrasound to the ultrasound range and in response to a required sound signal, the sound generator comprising: first, second, and third acoustically-separated volumes (13, 10, and output of speaker); at least one sound outlet between said second and third acoustically-separated volumes (9); a pump system adapted to convey a fluid volume flow between said first and second volumes (14); and means for modulating a fluid flow through said at least one sound outlet (1A and 1N).

Regarding Claim 66, Doi discloses fluid pumping device comprising an inlet (9), an outlet (output of speaker), a waveguide located therebetween (9') and a vibrational exciter (1A and 21A) adapted to excite mechanical transverse waves in said waveguide, thereby to generate fluid glow from said inlet to said outlet.

Regarding Claim 67, Doi discloses a method of generating in response to a required sound signal, in particulate reproducing anti-sound, signal, signal, speech, and music in the infrasound to the ultrasound range, the method of comprising the steps of: pumping a fluid volume flow (14) between two acoustically-separated volumes (13 and output of speaker) and through a sound outlet (9) such that the direct flow component of the fluid volume flow is zero (Col. 3, lines 57-59); and modulating said volume fluid flow in response to said required sound signal (1A through 1N).

Regarding Claim 11, Doi further discloses a separated volume is a buffer volume (10).

Regarding Claim 12, Doi further discloses the pumping frequency is equal to the frequency of sound (1A, 21A)

Regarding Claim 13, Doi further discloses the pumping frequency of large to the frequency of sound (14, constant).

Regarding Claim 14, Doi further discloses the wavelength of required sound large relative to the sound outlet (pipe 2 and speaker 9).

Regarding Claim 15, Doi further discloses multiple pumps (1A-N and 21A-N).

Regarding Claim 18, Doi further discloses at least one valve (21A).

Regarding Claim 19, Doi further discloses the pump is means for modulating (14).

Regarding Claim 23, Doi further discloses the pump system produces volume displacement and/or pressure variation through mechanical waveguides (12, 3).

Regarding Claim 24, Doi discloses the pump has a fixed direction (14).

Regarding Claim 25, Doi discloses pump 14 having a suck and blow operation (inherent pump must suck air to blow air).

Regarding Claim 26, Doi further discloses pump supplies an analogue volume flow (Col. 3, lines 50-60).

Regarding Claim 27, Doi further discloses digital volume flow (see abstract).

Regarding Claim 28 and 29, it is inherent that the device will be cooled by the fluid itself due to thermodynamics.

Regarding Claim 30, Doi discloses the buffer volume is a cavity (10).

Regarding Claim 31, Doi discloses the buffer volumes are coupled to the pump (Fig. 1).

Regarding Claim 33, Doi discloses the sound outlet is connected to two volumes (output or speaker and 10).

Regarding Claim 34, it is inherent that Energy is temporally stored through fluid flow (i.e. kinetic energy).

Regarding Claim 35, Doi discloses sound outlets (9).

Regarding Claims 37 and 38, Fig. 1 discloses (9) being an aerodynamic diffuser and acoustical horn.

Regarding Claim 39, Doi discloses the sound outlet is a channel (Fig. 1).

Regarding Claim 41, Doi discloses an acoustic network before and after the sound outlet.

Regarding Claim 43, Doi discloses a valve (21).

Regarding Claims 44-46, Doi discloses modulation via valves (21A-21N).

Regarding Claim 49, Doi discloses the fluid in the sound outlet undergoes natural sound oscillation (Fig. 1).

Regarding Claim 52, Doi discloses two or more parts achieving modulation (Fig. 1).

Regarding Claim 55, Doi discloses a plurality of sound outlets for frequency adjustment (9).

Regarding Claims 58-60 Doi discloses the sound outlet being located on the pipe and having an additional opening (Fig. 1).

Regarding Claims 62-64, Doi discloses a loudspeaker system and sound generator (Fig. 1).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 17, 36, 42, 56, and 57 rejected under 35 U.S.C. 103(a) as being unpatentable over Doi (US Patent 4,194,095).

Regarding Claim 17, Doi does not disclose the pumps are of differing sizes. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use different size pumps as a matter of design choice.

Regarding Claims 36 and 42, Doi as applied to claim 10 does not disclose the sound outlet having fabric as dust or contact protection. It is notoriously well known that speakers can have fabric covers to protect the sound outlet from items coming in contact with the outlet that may cause interference with the production of sound. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to protect the sound outlet to avoid interference with sound production.

Regarding Claims 56 and 57, Doi does not disclose the pumps connected in series or parallel. However, it would have been obvious to one of ordinary skill in the art

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at the time the invention was made to connect the pumps in series or parallel as a matter of design choice.

11. Claims 32 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doi as applied to claims 11 and 10 above respectively in view of Nilsson et al. (Hereinafter "Nilsson") (S Patent 3,768,589).

Doi discloses a sound generator as stated apropos of claims 11 and 10 above but does not disclose an acoustic damper. Nilsson discloses a sound generator with an acoustic damper (8) to improve partial vibrations (Col. 1, lines 58-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a acoustic damper to improve partial vibrations as taught by Nilsson.

Allowable Subject Matter

12. Claims 16, ^{are} 17, 20, 21, 50, 51, 52, 54, ~~55, 56, 57~~ are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takayama et al. (US Patent 6,002,781) discloses a speaker system with sound outlet and pump system.

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Kim et al. (US patent 5,606,626) discloses a sound outlet and pump system.

Asami et al. (US Patent 5,060,274) discloses a speaker system with a pump.

Thompson (US Patent 4,627,05) discloses a sound system with an air pump and modulator.

Grodinsky (US Patent 3,778,551) discloses an air cooled speaker assembly

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (571)272-7524. The examiner can normally be reached on M-F 7-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JIM


September 29, 2005


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